

REMARKS/ARGUMENTS

This Reply is responsive to the Office Action dated February 4, 2010. Claims 1-5, 9-12, 15-18, 30-31, and 36-42 were pending in the application. In the Office Action, Claims 1-5, 9-12, 15-18, 30-31, 36-42 were rejected. In this Reply, Applicant argues the patentability of Claims 1-5, 9, 12, 16-18, 36-42. Claims 1-5, 9, 12, 16-18, 36-42 thus remain for consideration.

Applicant submits that Claims 1-5, 9, 12, 16-18, 36-42 are in condition for allowance and requests withdrawal of the rejections in light of the following remarks.

A. Claim Rejections Under 35 U.S.C. §112, first paragraph

Claim 1-5, 9, 12, 16-18 and 36-42 was rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Specifically, the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor, at the time the application was filed, had possession of the claimed invention.

The Examiner states that the specification as originally filed does not provide support for the claimed structure of a breathable thermoplastic film comprising a thermoplastic polyurethane blended with about 40-60% ethylene methacrylate polymer. Applicant respectfully disagrees. The specification on Page 9, ¶[0041] discusses that the most preferred material as a tie layer is EMA having a methyl acrylate level of about 18% or greater. This means that the EMA may be blended with the breathable film from a level of 18% to any level greater than 18%. A methyl acrylate level of 40-60% is greater than 18% and is therefore supported by the specification.

B. Claim Rejections Under 35 U.S.C. § 103(a)

1. Claims 1-5, 9, 12, 16-18 and 36-42 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over WO 9637668 in view of Corzani et al (U.S. Patent App. Pub. No. 2003/0194566).

Applicant submits that independent Claim 1 is patentable over WO 9637668 and Corzani.

Applicant's Claim 1 recites:

“A non-asphaltic underlayment comprising:

a glass fiber-based substrate in which a first surface thereof is directly adhered to a breathable thermoplastic film having a minimum thickness of 2 mils, **the breathable thermoplastic film comprises a thermoplastic polyurethane blended with about 40 to 60% ethylene methacrylate polymer**, wherein the ethylene methacrylate polymer acts as an adhesion improvement component that improves adhesion between the breathable thermoplastic film and the glass fiber-based substrate, said breathable thermoplastic film imparts water-resistance to the underlayment while maintaining breathability thereof, the breathable thermoplastic film having a minimum moisture vapor transmission rate of greater than about 3 perms.” (Emphasis Added).

Claims 18 and 37 contain similar limitations.

The combination of WO 9637668 and Corzani does not disclose a breathable thermoplastic film that comprises a thermoplastic polyurethane blended with about 40 to 60% ethylene methacrylate polymer.

WO 9637668 discloses an air barrier for installation on roofs. The air barrier may include a water vapor permeable layer bonded to a fabric layer but, as Examiner admits, WO ‘668 does not teach blending an adhesion promoter into the vapor permeable layer.

To overcome the deficiencies of WO '668, the Examiner relies upon Corzani to teach blending an additional component into the vapor permeable layer of WO '668. The Examiner states that since Corzani teaches employing the ethylene methacrylate polymer as an adhesion promoting additive with polyurethane breathable films, the person of ordinary skill in the art would have been able to select the optimum amount of ethylene methacrylate polymer which produced the best adhesion to the laminate.

Applicant, however, does not believe this to be true because a 40-60% range of EMA would not be evident to one of ordinary skill in the art because **only within this range does EMA generate a reasonable bond strength to the glassmat and provide a desirable permeating (10-20 perms) for the assembly.** Furthermore, this range is not only outside Corzani's ranges but also provides a surprisingly optimum combination of bond strength to the glassmat and moisture vapor transmission range.

Additionally, Corzani does not teach or suggest a 40-60% range for a functional copolymer such as EMA. Nor does Corzani provide a reasonable amount of guidance with respect to its additional components for bond strength. Corzani merely provides a laundry list of additional components that may be added to the vapor layer but never teaches ranges of those components or why one component is better suited than other components for certain purposes. Furthermore, Corzani does not teach or suggest using a range of 40-60% for a functional copolymer such as EMA.

Moreover, the present invention is directed towards a breathable thermoplastic film that comprises a thermoplastic polyurethane blended with about 40 to 60% ethylene methacrylate polymer. Specifically, during experimentation, it was found that EMA was a good compatibilizer for the present invention but if too little EMA (<40%) was blended with the TPU

that the breathable thermoplastic film would have too much breathability and thus would limit the functionality of the underlayment. It was also found that if too much EMA (>60%) was added to the TPU that the breathable thermoplastic film would have too little breathability and thus would effect the functionality of the underlayment. Accordingly, the present invention is not obvious over the combination of WO'668 and Corzani because the present invention has a very specific range (40-60%) for ethylene methacrylate polymer (EMA) to achieve a breathable thermoplastic film having a minimum moisture vapor transmission rate of greater than about 3 perms.

Since the combination of WO '68 and Corzani does not disclose a breathable thermoplastic film that comprises a thermoplastic polyurethane blended with about 40 to 60% ethylene methacrylate polymer and does not give any direction or guidance on the range or best suited adhesion component, Applicant believes that independent Claims 1, 18 and 37 are patentable over WO '668 and Corzani – taken either alone or in combination.

Claims 2-5, 9, 12, 16-17 and 36 depend on claim 1. Since Claim 1 is believed to be patentable over WO 9637668 and Corzani, Claims 2-5, 9, 12, 16-17 and 36 are believed to be patentable over WO 9637668 and Corzani on the basis of their dependency on Claim 1.

Claims 38-42 depend on claim 37. Since Claim 37 is believed to be patentable over WO 9637668 and Corzani, Claims 38-42 are believed to be patentable over WO 9637668 and Corzani on the basis of their dependency on Claim 37.

CONCLUSION

In view of the aforementioned remarks and amendments, the Applicant believes that each of the pending claims is in condition for allowance. If, upon receipt and review of this amendment, the Examiner believes that the present application is not in condition for allowance and that changes can be suggested which would place the claims in allowable form, the Examiner is respectfully requested to contact Applicant's undersigned counsel at the number provided below.

The Director is hereby authorized to charge any fees that may be associated with this filing or credit any overpayment of same, to Deposit Account No. 03-1250, under Reference No. FDN-2815, Customer No. 43,309.

Respectfully submitted,

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